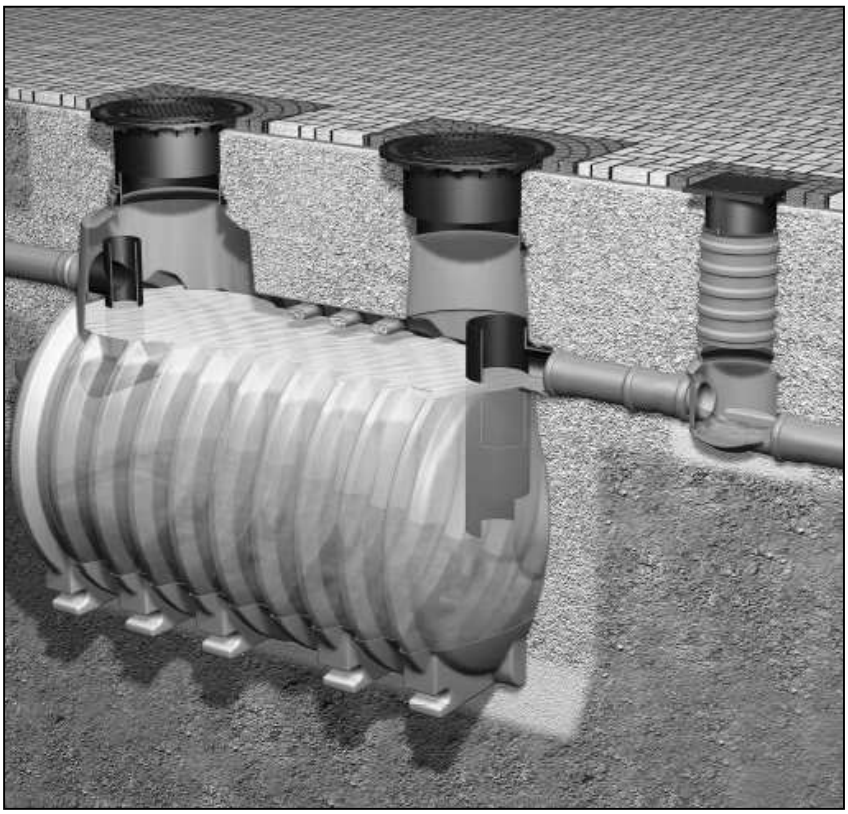
INSTALLATION AND OPERATING INSTRUCTIONS

KESSEL–Grease Separator Euro “G” NG 7-20
For underground installation

KESSEL Grease Separator Version G Certified under Euro-Norm EN 1825-1 NG 7 – 20 for underground installation	Art.Nos. 93007/120(B/D) 90010/120(B/D) 93015/120(B/D) 93020/120(B/D)



Product advantages

- Euro-Norm 1825-1 certified
- Quick and easy assembly
- Compact / light
- 100% resistance against aggressive grease and soil acids
- Transport friendly
- Vertically adjustable upper section

◆

The installation and service of this unit should be carried out by a licensed professional servicer Company - Telephone No.	

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(Subject to technical amendment

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1. Safety precautions

Dear Customer,

Before the KESSEL Euro Separator Version G is installed and placed in operation please carefully read and follow all of the instructions contained in this Installation, Maintenance and User's Manual.

Upon delivery of the Euro Separator please thoroughly inspect the separator to make sure that it has not been damaged during shipping. In case damage has occurred to the separator, please follow the instructions listed in the ‚Guarantee' section of this user's manual.

By installation, use, maintenance and repair of this unit please follow all appropriate DIN / VDE / DVGW safety precautions and accident prevention guidelines. Also please follow any local safety precautions and accident prevention guidelines established in your area.

Please note that the unit is designed to receive kitchen waste water with a maximum temperature of 60 degrees Celsius (140 degrees F). Temperatures higher than 60 degrees Celsius could damage the unit.

Do not stand or place excessive weight on the separator. During disposal / emptying of a Type G separator, a step ladder should be used to help gain access to the openings on the top of the separator.

NO SMOKING! Smoking must not be permitted near the separator during use, maintenance and repair of the unit due to the potential build up of methane / biogas.

SLIPPERY WHEN WET! Take caution when standing / walking near the separator. During disposal, cleaning and maintenance the surrounding area can become extremely slippery due to spilled water / grease / fat.

Separator Area Regulations:

- No access of the separator for unauthorized personnel
- No storage of food / groceries / provisions (for hygienic reasons) if the separator is installed underground within a building.
- The location of the separator should be chosen carefully as to allow sufficient access for maintenance, inspection, repair and disposal of the separator.
- The wastewater in a grease separator can contain bacteria. After coming in contact with wastewater or the separator itself, it is important to wash, clean and disinfect all skin which has been contaminated.

All personnel having anything to do with the separator should have a sound knowledge of the above safety precautions.

2. General

2.1 Application

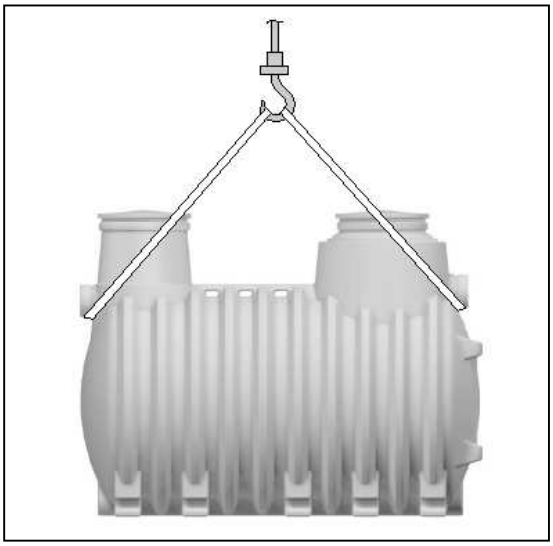
According to DIN 4040 and EN 1825, the installation of grease separators is required wherever oils and fats from animals and plants are introduced into waster water systems. Uncollected, oils and fats can cause serious damage to wastewater piping and private / public waste water treatment plants.

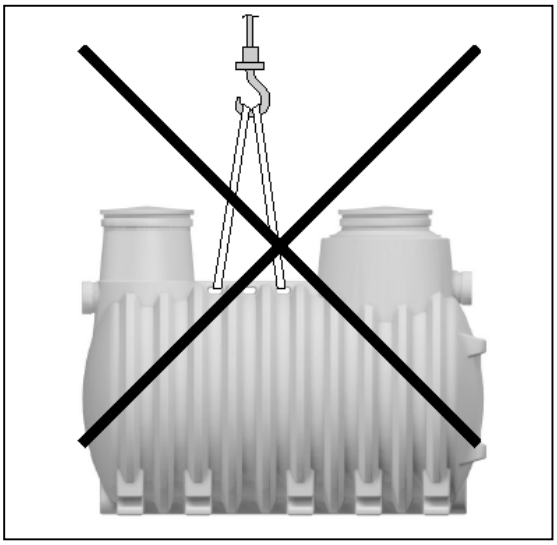
2.2 Separator description

The KESSEL Euro Grease Separator Version G consist of a grease separator with integrated sludge trap. The separator is constructed from Polyethylene (PE). Due to the smooth, wax like surface of the material Polyethylene, no additional protective coating is necessary. The separator is designed to be installed underground at a predetermined depth (below the frost level) and with the selected load class manhole cover (Class A, B or D).

3. Transport and storage

3.1 Transport





Transportation of the KESSEL separator should be handled only by a transporter who has the proper knowledge, equipment and employees to handle such a product. During transport the separator must be firmly fixed into position and must not be allowed to move or shift in place. It also must be protected from other objects coming in contact with the separator during transport.

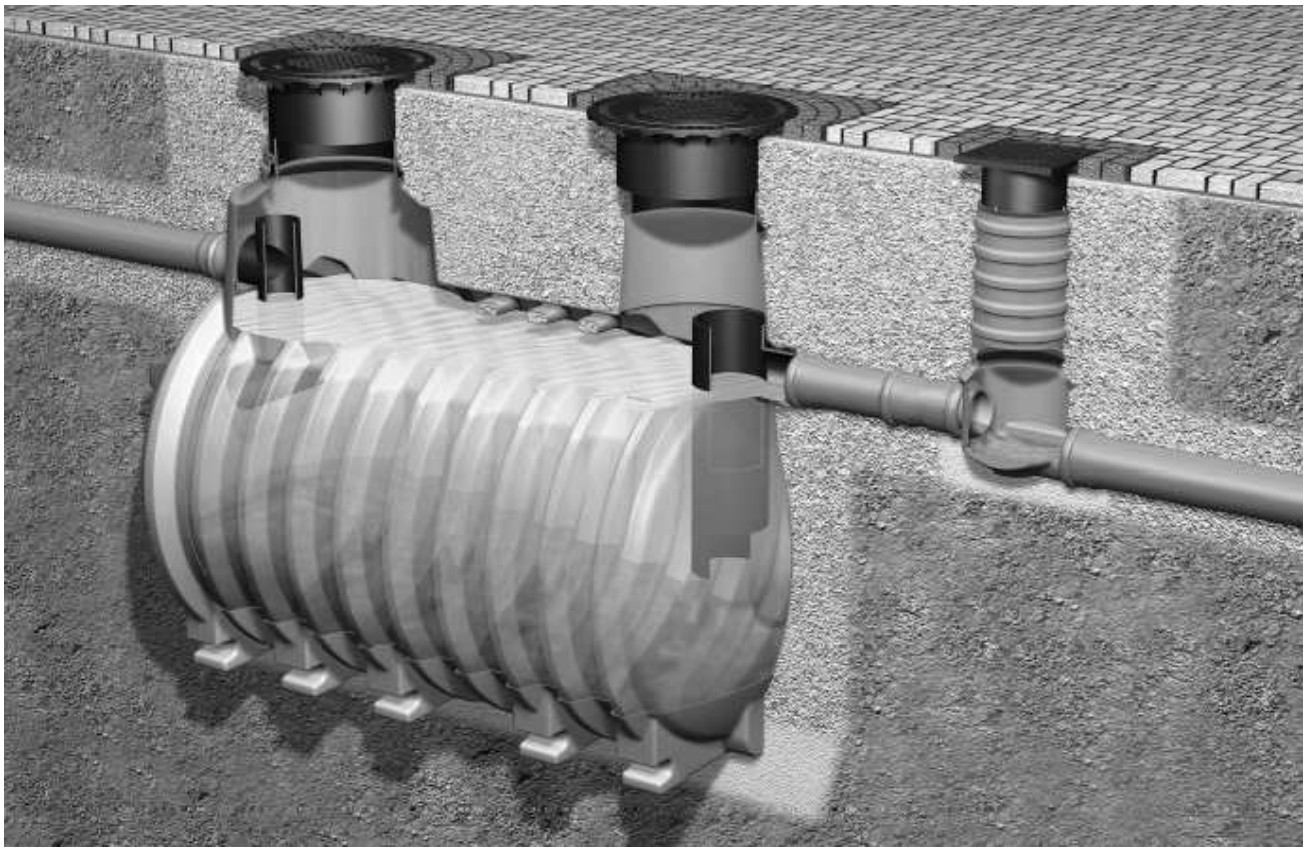
If and when the separator is lifted it is important to follow the following correct procedures: The separator is not to be lifted with the use of steel cables or chains. Proper equipment are heavy duty cloth or hemp straps designed to handle the corresponding loads. The separator should be lifted by placing the proper straps beneath the inlet and outlet of the separator as seen in the illustration. Do not lift the separator by the small holes between the two manholes covers as illustrated on this page. In instances where a forklift is used, secure the separator to the forklift with appropriate cloth / hemp securing straps.

3.2 Storage

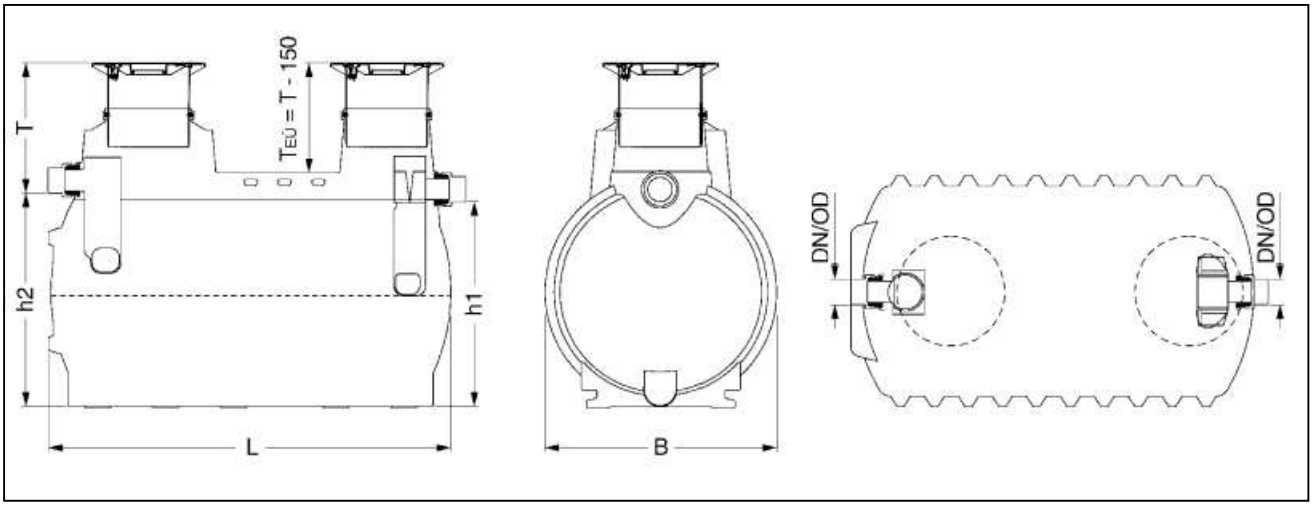
In cases where the separator needs to be temporarily stored before installation, it is important that the separator is placed on firm level ground and in an area where it is protected from coming in contact with other objects. Storing the separator outdoors will not cause any problems.

4. Installation

4.1 Installation illustration (class B, 12.5 tons)



4.2 Dimensioned drawing for NG 7, 10, 15 and 20 sizes



									Waste Water Content			
NG	DN	OD	L	B	Tmin	Tmax	H1	H2	Sludge trap	Separator volume	Fat storage	Weight
7	150	160	2080	1200	950	1280	1030	1100	700 l	1100 l	280 l	331 kg
10	150	160	2860	1200	950	1280	1030	1100	1000 l	1500 l	400 l	403 kg
15	200	200	2300	1760	1000	1330	1560	1630	1500 l	3300 l	600 l	401 kg
20	200	200	3060	1760	1000	1330	1560	1630	2000 l	3700 l	800 l	473 kg

4. Installation

4.3. Separator commissioning

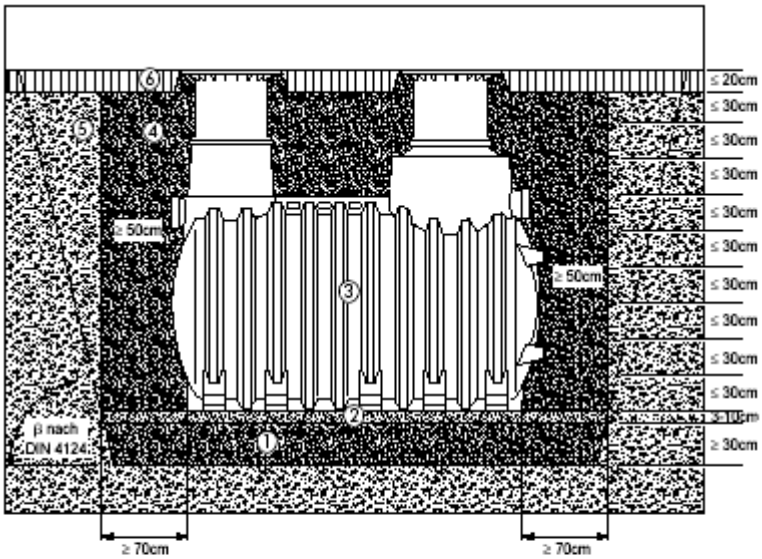
When the shipment arrives, please inspect it immediately for damage which may have been caused during transport / shipping!

The KESSEL separator must be installed below the frost level. This can be achieved by the use of the vertically adjustable upper sections. The manhole covers for the upper sections are available in load classes A (1.5 ton), B (12.5 ton) and D (40.0 ton) and meet EN 124 standards.
Note - before installation, make sure that no dirt / grit / debris exits between any of the sealing areas (gaskets). Also check the entire separator to make sure that no cracks, holes or dents have occurred during transportation or storage.
Note - A standard KESSEL oil / fuel or coalescence separator is not to be installed below the groundwater level. Before installation, be sure to determine the groundwater level at the site of installation to make sure that groundwater will not come in contact with the separator.
Note - Underground separators to be installed below the groundwater table are available upon request.

- The excavation in which the separator is to be installed must be level and capable of handling the appropriate loads. The base of the excavation should be comprised of a 25 to 30 cm layer of frost free gravel covered by a 3 to 10 cm layer of sand or fine gravel.
- Before installation, remove the float switch chamber (coalescence & float switch chamber if a coalescence separator is being installed) and store in a safe place. Place the separator in the prepared excavation hole. Make sure the separator is level and rests at the appropriate elevation. Fill the separator with fresh cold water to the outlet level.
- The excavation should now be backfilled with non-binding material such as sand, or fine gravel. Backfill only the main body of the separator, do not backfill around the upper sections. The backfill should be firmly compacted at incremental levels (approx 300 mm). For load class D (40.0 ton) situations, the upper section and manhole cover of the underground separator must be poured into a steel reinforced concrete apron for proper load support. Additional information regarding this load class D support is available from KESSEL.
- Connect the inlet and outlet of the separator to the drainage piping and fill the entire separator (to the outlet level) with clean cold water.
- No vertical drainage pipes should be connected within one meter of the inlet of the separator. This one meter section (immediately prior to the inlet of the separator) serves as a wastewater calming section which hinders turbulence which can introduce unwanted oxygen and foam into the separator. All connections of vertical pipe (outside of the 1 meter calming section) should me connected to the main inlet pipe with two 45 degree fittings rather than one abrupt 90 degree fitting.
- Install and adjust the upper section(s) of the separator to the desired level and secure with the included clamp ring (clamp ring will rest on the chamber itself). Final upper section level adjustments can be made by manipulating the elevation adjustment screws located on the clamp ring. Back fill the remaining area around the upper sections with sand or fine gravel leaving space for a 15 cm concrete load supporting apron (steel reinforced) if required.

4. Installation

NOTICE - Take care not to place any loads on top of the manhole covers and upper sections of the separator until the separator is completely backfilled and (if required) the load supporting concrete apron around the manhole covers has completely cured.



① Unterbau:	Rundkornkies (max. Körnung 8/16) nach DIN 4226-1 verdichtet mit D_{pr}=95%
② Behälterbett:	verdichteter Sand
③ Fettabscheider	
④ Behälterumhüllung:	Rundkornkies (max. Körnung 8/16) nach DIN 4226-1 verdichtet mit D_{pr}=95%
⑤ Bereich außerhalb Behälterumhüllung:	Material geeigneter Beschaffenheit
⑥ Deckschicht:	Humus, Straßenbelag, Beton o.ä.

1) Sub-surface	gravel / process, compacted according to DIN 4226-1, Dp=95%
2) Support layer	compacted sand
3) Separator	KESSEL Separator
4) Excavation backfill	gravel / process, compacted according to DIN 4226-1, Dp=95%
5) On-site material	unexcavated on-site material (leave in place)
6) Final layer	concrete, paving stones, earth etc.

5. Commissioning

5.1 Separator commissioning

Before the separator is put into service please make sure that:

- ✓ The separator is completely clean, including inlet and outlet, and that the interior of the chamber is free of dirt and debris.
- ✓ The cleaned separator is completely filled with clean cold water up to the outlet.

5. 2 Commissioning participants

The commissioning of the separator is usually handled by a tradesman although this can be handled by a KESSEL contractor or KESSEL employee if desired.

1) The following people should be on hand during the commissioning:
   - ◆ Building contractor representative
   - ◆ Plumber / tradesman who will be maintaining the separator
   - ◆ Building maintenance personnel
   - ◆ Disposal company who will be handling the disposal account
2) Commissioning preparation
   - ◆ Separator is completely filled with clean water
3) Commissioning
   - ◆ Separator to be checked for watertightness and for proper functionality
   - ◆ Contents of this user's manuals to be discussed with those present
4) Transfer of this manual to the appropriate personnel

6. Separator contents disposal

The first emptying (disposal) of the separator contents should take place within 2 to 3 weeks from the day the separator was placed into service.

➢ Disposal intervals

According to DIN V 4040-2, it is advised that sludge and grease separators should be fully emptied, cleaned and refilled with cold fresh water at fourteen day intervals or at least on a monthly basis. In order for a grease separator to function as designed, it is very important that the separator is emptied at regular intervals as described above. Due to this, it is recommended that a licensed disposal company is contracted to empty the separator at regular intervals and during times when strong odours will not present a problem.

➢ Disposal procedure

- Remove manhole cover.
- Place disposal truck's suction hose inside separator and remove entire contects of chamber.
- Rinse and clean interior walls of chamber. Remove coalgulated fat/oil and debris.
- Refill chamber with cold clean water.
- Clean and grease all accessible seals. Replace seals if necessary.
- Replace cover(s) and secure with cover clamps.

7. Maintenance

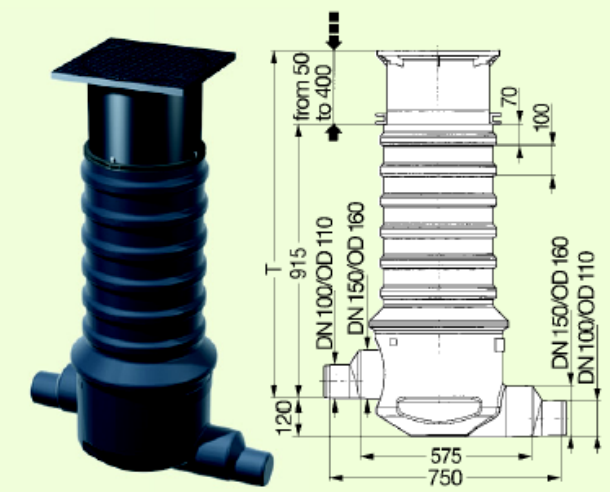
Before the separator is placed into service and at regular intervals thereafter, it is important that:

1. **The interior and exterior walls of the separator are thoroughly cleaned and checked for damage. Inlet and outlet equipment should also be checked.**
2. **All inspection and maintenance work should be logged into this user's manual. Information concerning each disposal should also be kept on record.**

Please take care that:

- This Installation, Service and Maintenance Guide is kept in a safe location where it is always available.
- The disposal of the separator is only carried out by a certified company.
- Safety precautions listed in this manual and all other relevant safety precautions are followed at all times.
- Smoking IS NOT ALLOWED in the near proximity to the separator due to the potential build up of methane / biogas.

8. Replacement parts and accessories



KESSEL-Polyethylene Sampling Chamber Ø 400

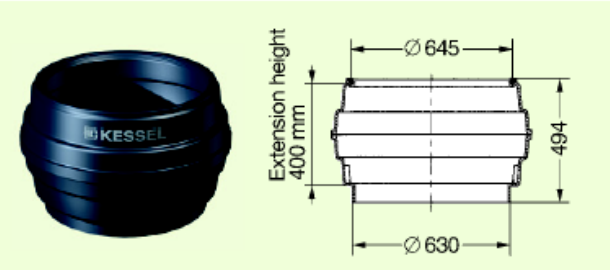
For underground installation. For connection after grease/starch separators for taking effluent samples.

Inlet and outlet are both DN 100 and DN 150 sizes and connect to polymer piping according to DIN 19534, 400 mm interior diameter, vertically adjustable cover with clamp ring, odor tight, 120 mm inlet to outlet elevation drop, covers available in Class A (1.5 ton), Class B (12.5 ton) and Class D (40.0 ton) load classes.

Manufacturer: KESSEL

Inlet depth T (mm)	Inlet - Outlet sizes DN	OD	Article # class A	class B	class D
* 400-1300	100/150	110/160	915880A	915880B	915880D
1330-1660	100	110	915813A	915813B	915813D
1330-1660	150	160	915823A	915823B	915823D

* Can be sawed off for shallower installation depths



KESSEL-Extension section

Fits all KESSEL underground grease and starch separators. Increases height by 400 mm. Complete with sealing gasket.

Type	Article #
Extension section H=400 mm	917402

KESSEL-Cast iron manhole cover for Euro-Norm 124 underground grease separator.

Includes gasket and screws.

Load Class	Article #
class B	916802
class D	916803

KESSEL-Replacement gasket

for manhole cover

Article #
917101

9. Guarantee

1. In the case that a KESSEL product is defective, KESSEL has the option of repairing or replacing the product. If the product remains defective after the second attempt to repair or replace the product or it is economically unfeasible to repair or replace the product, the customer the has the right to cancel the order / contract or reduce payment accordingly. KESSEL must be notified immediately in writing of defects in a product. In the case that the defect is not visible or difficult to detect, KESSEL must be notified immediately in writing of the defect as soon as it is discovered. If the product is repaired or replaced, the newly repaired or replaced product shall receive a new warranty identical to that which the original (defective) product was granted. The term defective product refers only to the product or part needing repair or replacement and not necessarily to the entire product or unit. KESSEL products are warranted for a period of 24 months. This warranty period begins on the day the product is shipped from KESSEL to its customer. The warranty only applies to newly manufactured products. Additional information can be found in section 377 and 378 of the HGB.

2. Wear and tear on a product will not be considered a defect. Problems with products resulting from improper installation, handling or maintenance will also not be considered a defect.

01.01.2002

10. Separator characteristics

KESSEL

Type_____

Production number / production year_____

Weight / kg_____ length x width X height_____

EN_____ Approval_____

Sludge trap volume / l _____

Oil storage volume / l _____

Control stamp_____ Material _____

(Accessories)_____

This unit has been checked for watertightness to be sure that it is fully operational before leaving the factory.

Date Name of examiner

Important contacts / Info

Separator Type _____

Day / Hour _____

Project description /
Building services supervisor _____
Address _____
Telephone / Fax _____

Builder _____
Address _____
Telephone / Fax _____

Planner _____
Address _____
Telephone / Fax _____

Contracted plumbing company _____
Address _____
Telephone / Fax _____

Commissioning no. KESSEL
System operator / owner _____
Address _____
Telephone / Fax _____

Other remarks _____

The system operator, and those responsible, were present during the commissioning of this system.

_____
Place and Date

Everything for drainage

- Backwater valves and cleanouts
- Polymer and cast iron drains
- Volatile liquid traps
- Lifting stations, pumps, warning and control units
- Rainwater management systems
- Grease separators
- Oil/fuel and coalescence separators
- Inspection chambers
- Custom projects for industrial applications